SEQUENCE LISTING

<110> Board of Control of Michigan Technological Univers

<120> METHOD FOR ENHANCING CELLULOSE AND MODIFYING LIGNIN BIOSYNTHESIS IN PLANTS

<130> 66040/9675

<140>
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<150> 60/135,280
<151> 1999-05-21

<160> 6

<170> PatentIn Ver. 2.1

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cag gtg ggg cat gat gca aat ggg gag cta ttt gtg gct tgc cat gag 158
Gln Val Gly His Asp Ala Asn Gly Glu Leu Phe Val Ala Cys His Glu
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tgt agc tat ccc atg tgc aag tct tgt ttc gag ttt gaa atc aat gag 206
Cys Ser Tyr Pro Met Cys Lys Ser Cys Phe Glu Phe Glu Ile Asn Glu
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ggc cgg aaa gtt tgc ttg cgg tgt ggc tcg cca tat gat gag aac ttg 254
Gly Arg Lys Val Cys Leu Arg Cys Gly Ser Pro Tyr Asp Glu Asn Leu
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ctg gat gat gta gaa aag aag ggg tct ggc aat caa tcc aca atg gca 302
Leu Asp Asp Val Glu Lys Lys Gly Ser Gly Asn Gln Ser Thr Met Ala
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tct cac ctc aac gat tct cag gat gtc gga atc cat gct aga cat atc 350
Ser His Leu Asn Asp Ser Gln Asp Val Gly Ile His Ala Arg His Ile
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Ser Ser Val Ser Thr Val Asp Ser Glu Met Asn Asp Glu Tyr Gly Asn

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aag aaa aag aga agt cct aag gct gaa act gaa cca gct caa gtt cct   494
Lys Lys Lys Arg Ser Pro Lys Ala Glu Thr Glu Pro Ala Gln Val Pro
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aca gaa cag cag atg gaa gag aaa ccg tct gca gag gct tcg gag ccg   542
Thr Glu Gln Gln Met Glu Glu Lys Pro Ser Ala Glu Ala Ser Glu Pro
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ctt tca att gtt tat cca att cca cgc aac aag ctc aca cca tac aga   590
Leu Ser Ile Val Tyr Pro Ile Pro Arg Asn Lys Leu Thr Pro Tyr Arg
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gca gtg atc att atg cga ctg gtc att ctg ggc ctc ttc ttc cac ttc   638
Ala Val Ile Ile Met Arg Leu Val Ile Leu Gly Leu Phe Phe His Phe
175                 180                 185                 190

aga ata aca aat cct gtc gat agt gcc ttt ggc ctg tgg ctt act tct   686
Arg Ile Thr Asn Pro Val Asp Ser Ala Phe Gly Leu Trp Leu Thr Ser
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gtc ata tgt gag atc tgg ttt gca ttt tct tgg gtg ttg gat cag ttc   734
Val Ile Cys Glu Ile Trp Phe Ala Phe Ser Trp Val Leu Asp Gln Phe
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ccc aag tgg aat cct gtc aat aga gaa acg tat atc gaa agg ctg tcg   782
Pro Lys Trp Asn Pro Val Asn Arg Glu Thr Tyr Ile Glu Arg Leu Ser
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gca agg tat gaa aga gag ggt gag cct tct cag ctt gct ggt gtg gat   830
Ala Arg Tyr Glu Arg Glu Gly Glu Pro Ser Gln Leu Ala Gly Val Asp
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ttt ttc gtg agt act gtt gat ccg ctg aag gaa ccg cca ttg atc act   878
Phe Phe Val Ser Thr Val Asp Pro Leu Lys Glu Pro Pro Leu Ile Thr
255                 260                 265                 270

gcc aat aca gtc ctt tcc atc ctt gct gtg gac tat ccc gtc gat aaa   926
Ala Asn Thr Val Leu Ser Ile Leu Ala Val Asp Tyr Pro Val Asp Lys
                275                 280                 285

gtc tcc tgc tac gtg tct gat gat ggt gca gct atg ctt tca ttt gaa   974
Val Ser Cys Tyr Val Ser Asp Asp Gly Ala Ala Met Leu Ser Phe Glu
            290                 295                 300

tct ctt gta gaa aca gct gag ttt gca agg aag tgg gtt ccg ttc tgc   1022
Ser Leu Val Glu Thr Ala Glu Phe Ala Arg Lys Trp Val Pro Phe Cys
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aaa aaa ttc tca att gaa cca aga gca ccg gag ttt tac ttc tca cag   1070
Lys Lys Phe Ser Ile Glu Pro Arg Ala Pro Glu Phe Tyr Phe Ser Gln
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aaa att gat tac ttg aaa gac aag gtt caa cct tct ttc gtg aaa gaa   1118
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cgt aga gca atg aaa agg gat tat gaa gag tac aaa gtc cga gtt aat   1166
Arg Arg Ala Met Lys Arg Asp Tyr Glu Glu Tyr Lys Val Arg Val Asn
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gcc ctg gta gca aag gct cag aaa aca cct gaa gaa gga tgg act atg   1214
Ala Leu Val Ala Lys Ala Gln Lys Thr Pro Glu Glu Gly Trp Thr Met
            370                 375                 380

caa gat gga aca cct tgg cct ggg aat aac aca cgt gat cac cct ggg   1262
Gln Asp Gly Thr Pro Trp Pro Gly Asn Asn Thr Arg Asp His Pro Gly
        385                 390                 395

cat gat tca ggt ctt cct tgg gaa ata ctg gga gct cgt gac att gaa   1310
His Asp Ser Gly Leu Pro Trp Glu Ile Leu Gly Ala Arg Asp Ile Glu
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gga aat gaa cta cct cgt cta gta tat gtc tcc agg gag aag aga cct   1358
Gly Asn Glu Leu Pro Arg Leu Val Tyr Val Ser Arg Glu Lys Arg Pro
415                 420                 425                 430

ggc tac cag cac cac aaa aag gct ggt gca gaa aat gct ctg gtg aga   1406
Gly Tyr Gln His His Lys Lys Ala Gly Ala Glu Asn Ala Leu Val Arg
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gtg tct gca gta ctc aca aat gct ccc tac atc ctc aat gtt gat tgt   1454
Val Ser Ala Val Leu Thr Asn Ala Pro Tyr Ile Leu Asn Val Asp Cys
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gat cac tat gta aac aat agc aag gct gtt cga gag gca atg tgc atc   1502
Asp His Tyr Val Asn Asn Ser Lys Ala Val Arg Glu Ala Met Cys Ile
        465                 470                 475

ctg atg gac cca caa gta ggt cga gat gta tgc tat gtg cag ttc cct   1550
Leu Met Asp Pro Gln Val Gly Arg Asp Val Cys Tyr Val Gln Phe Pro
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cag agg ttt gat ggc ata gat aag agt gat cgc tac gcc aat cgt aac   1598
Gln Arg Phe Asp Gly Ile Asp Lys Ser Asp Arg Tyr Ala Asn Arg Asn
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gta gtt ttc ttt gat gtt aac atg aaa ggg ttg gat ggc att caa gga   1646
Val Val Phe Phe Asp Val Asn Met Lys Gly Leu Asp Gly Ile Gln Gly
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cca gta tac gta gga act ggt tgt gtt ttc aac agg caa gca ctt tac   1694
Pro Val Tyr Val Gly Thr Gly Cys Val Phe Asn Arg Gln Ala Leu Tyr
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ggc tac ggg cct cct tct atg ccc agc tta cgc aag aga aag gat tct   1742
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gat cca gct gag gta tac aga gat gca aaa aga gag gat ctc aat gct   1838
Asp Pro Ala Glu Val Tyr Arg Asp Ala Lys Arg Glu Asp Leu Asn Ala
575                 580                 585                 590

gcc ata ttt aat ctt aca gag att gat aat tat gac gag cat gaa agg   1886
Ala Ile Phe Asn Leu Thr Glu Ile Asp Asn Tyr Asp Glu His Glu Arg
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tca atg ctg atc tcc cag ttg agc ttt gag aaa act ttt ggc tta tct   1934
Ser Met Leu Ile Ser Gln Leu Ser Phe Glu Lys Thr Phe Gly Leu Ser
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tct gtc ttc att gag tct aca cta atg gag aat gga gga gta ccc gag   1982
Ser Val Phe Ile Glu Ser Thr Leu Met Glu Asn Gly Gly Val Pro Glu
        625                 630                 635

tct gcc aac tca cca cca ttc atc aag gaa gcg att caa gtc atc ggc   2030
Ser Ala Asn Ser Pro Pro Phe Ile Lys Glu Ala Ile Gln Val Ile Gly
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tgt ggc tat gaa gag aag act gaa tgg gga aaa cag att ggt tgg ata   2078
Cys Gly Tyr Glu Glu Lys Thr Glu Trp Gly Lys Gln Ile Gly Trp Ile
655                 660                 665                 670

tat ggg tca gtc act gag gat atc tta agt ggc ttc aag atg cac tgc   2126
Tyr Gly Ser Val Thr Glu Asp Ile Leu Ser Gly Phe Lys Met His Cys
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cga gga tgg aga tca att tac tgc atg ccc gta agg cct gca ttc aaa   2174
Arg Gly Trp Arg Ser Ile Tyr Cys Met Pro Val Arg Pro Ala Phe Lys
            690                 695                 700

gga tct gca ccc atc aac ctg tct gat aga ttg cac cag gtc ctc cga   2222
Gly Ser Ala Pro Ile Asn Leu Ser Asp Arg Leu His Gln Val Leu Arg
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tgg gct ctt ggt tct gtg gaa att ttc ttt agc aga cac tgt ccc ctc   2270
Trp Ala Leu Gly Ser Val Glu Ile Phe Phe Ser Arg His Cys Pro Leu
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tgg tac ggg ttt gga gga ggc cgt ctt aaa tgg ctc caa agg ctt gcg   2318
Trp Tyr Gly Phe Gly Gly Gly Arg Leu Lys Trp Leu Gln Arg Leu Ala
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tat ata aac acc att gtg tac cca ttt aca tcc ctc cct ctc att gcc   2366
Tyr Ile Asn Thr Ile Val Tyr Pro Phe Thr Ser Leu Pro Leu Ile Ala
                755                 760                 765

tat tgc aca att cct gca gtt tgt ctg ctc acc gga aaa ttc atc ata   2414
Tyr Cys Thr Ile Pro Ala Val Cys Leu Leu Thr Gly Lys Phe Ile Ile
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att gaa gat tta tgg cgt aat gaa caa ttc tgg gtg atc gga ggt gtt   2558
Ile Glu Asp Leu Trp Arg Asn Glu Gln Phe Trp Val Ile Gly Gly Val
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tca gcc cat ctc ttt gcg gtc ttc cag gga ttc tta aaa atg ttg gct   2606
Ser Ala His Leu Phe Ala Val Phe Gln Gly Phe Leu Lys Met Leu Ala
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ggc atc gat acg aac ttc act gtc aca gca aaa gca gcc gaa gat gca   2654
Gly Ile Asp Thr Asn Phe Thr Val Thr Ala Lys Ala Ala Glu Asp Ala
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gaa ttt ggg gag cta tat atg gtc aag tgg aca aca ctt ttg att cct   2702
Glu Phe Gly Glu Leu Tyr Met Val Lys Trp Thr Thr Leu Leu Ile Pro
        865                 870                 875

cca acc aca ctt ctc att atc aat atg tcg ggt tgt gct gga ttc tct   2750
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gat gca ctc aac aaa gga tat gaa gca tgg ggg cct ctc ttt ggc aag   2798
Asp Ala Leu Asn Lys Gly Tyr Glu Ala Trp Gly Pro Leu Phe Gly Lys
895                 900                 905                 910

gtg ttc ttt gct ttc tgg gtg att ctt cat ctc tat cca ttc ctt aaa   2846
Val Phe Phe Ala Phe Trp Val Ile Leu His Leu Tyr Pro Phe Leu Lys
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ggt cta atg ggt cgc caa aac cta aca cca acc att gtt gtt ctc tgg   2894
Gly Leu Met Gly Arg Gln Asn Leu Thr Pro Thr Ile Val Val Leu Trp
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tca gtg ctg ttg gcc tct gtc ttc tct ctc gtt tgg gtc aag atc aat   2942
Ser Val Leu Leu Ala Ser Val Phe Ser Leu Val Trp Val Lys Ile Asn
        945                 950                 955

cca ttc gtt aac aaa gtt gat aac acc ttg gtt gcg gag acc tgc att   2990
Pro Phe Val Asn Lys Val Asp Asn Thr Leu Val Ala Glu Thr Cys Ile
    960                 965                 970

tcc att gat tgc tgagctacct ccaataagtc tctcccagta ttttggggtt      3042
Ser Ile Asp Cys
975

acaaaacctt tgggaattgg aatatgatcc tcgttgtagt ttccctcaag aaagcacata 3102

tcgctgtcag tatttaaatg aactgcaaga tgattgttct ctatgaagtt ttgaacagtt 3162

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Lys Val Cys Leu Arg Cys Gly Ser Pro Tyr Asp Glu Asn Leu
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Asp Val Glu Lys Lys Gly Ser Gly Asn Gln Ser Thr Met Ala
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Leu Asn Asp Ser Gln Asp Val Gly Ile His Ala Arg His Ile
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Val Ser Thr Val Asp Ser Glu Met Asn Asp Glu Tyr Gly Asn
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Trp Lys Asn Arg Val Lys Ser Cys Lys Asp Lys Glu Asn Lys
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Lys Arg Ser Pro Lys Ala Glu Thr Glu Pro Ala Gln Val Pro
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Gln Gln Met Glu Glu Lys Pro Ser Ala Glu Ala Ser Glu Pro
145                 150                 155

Ile Val Tyr Pro Ile Pro Arg Asn Lys Leu Thr Pro Tyr Arg
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Ile Ile Met Arg Leu Val Ile Leu Gly Leu Phe Phe His Phe
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Thr Asn Pro Val Asp Ser Ala Phe Gly Leu Trp Leu Thr Ser
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Cys Glu Ile Trp Phe Ala Phe Ser Trp Val Leu Asp Gln Phe
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Trp Asn Pro Val Asn Arg Glu Thr Tyr Ile Glu Arg Leu Ser
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Tyr Glu Arg Glu Gly Glu Pro Ser Gln Leu Ala Gly Val Asp
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Thr Val Leu Ser Ile Leu Ala Val Asp Tyr Pro Val Asp Lys Val Ser
275 280 285

Cys Tyr Val Ser Asp Asp Gly Ala Ala Met Leu Ser Phe Glu Ser Leu
290 295 300

Val Glu Thr Ala Glu Phe Ala Arg Lys Trp Val Pro Phe Cys Lys Lys
305 310 315 320

Phe Ser Ile Glu Pro Arg Ala Pro Glu Phe Tyr Phe Ser Gln Lys Ile
325 330 335

Asp Tyr Leu Lys Asp Lys Val Gln Pro Ser Phe Val Lys Glu Arg Arg
340 345 350

Ala Met Lys Arg Asp Tyr Glu Glu Tyr Lys Val Arg Val Asn Ala Leu
355 360 365

Val Ala Lys Ala Gln Lys Thr Pro Glu Glu Gly Trp Thr Met Gln Asp
370 375 380

Gly Thr Pro Trp Pro Gly Asn Asn Thr Arg Asp His Pro Gly His Asp
385 390 395 400

Ser Gly Leu Pro Trp Glu Ile Leu Gly Ala Arg Asp Ile Glu Gly Asn
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Glu Leu Pro Arg Leu Val Tyr Val Ser Arg Glu Lys Arg Pro Gly Tyr
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Gln His His Lys Lys Ala Gly Ala Glu Asn Ala Leu Val Arg Val Ser
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Ala Val Leu Thr Asn Ala Pro Tyr Ile Leu Asn Val Asp Cys Asp His
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Tyr Val Asn Asn Ser Lys Ala Val Arg Glu Ala Met Cys Ile Leu Met
465 470 475 480

Asp Pro Gln Val Gly Arg Asp Val Cys Tyr Val Gln Phe Pro Gln Arg
485 490 495

Phe Asp Gly Ile Asp Lys Ser Asp Arg Tyr Ala Asn Arg Asn Val Val
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Phe Phe Asp Val Asn Met Lys Gly Leu Asp Gly Ile Gln Gly Pro Val
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Tyr Val Gly Thr Gly Cys Val Phe Asn Arg Gln Ala Leu Tyr Gly Tyr
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Gly Pro Pro Ser Met Pro Ser Leu Arg Lys Arg Lys Asp Ser Ser Ser
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Cys Phe Ser Cys Cys Cys Pro Ser Lys Lys Lys Pro Ala Gln Asp Pro
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Ala Glu Val Tyr Arg Asp Ala Lys Arg Glu Asp Leu Asn Ala Ala Ile
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Phe Asn Leu Thr Glu Ile Asp Asn Tyr Asp Glu His Glu Arg Ser Met
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Leu Ile Ser Gln Leu Ser Phe Glu Lys Thr Phe Gly Leu Ser Ser Val
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Phe Ile Glu Ser Thr Leu Met Glu Asn Gly Gly Val Pro Glu Ser Ala
625 630 635 640

Asn Ser Pro Pro Phe Ile Lys Glu Ala Ile Gln Val Ile Gly Cys Gly
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Tyr Glu Glu Lys Thr Glu Trp Gly Lys Gln Ile Gly Trp Ile Tyr Gly
660 665 670

Ser Val Thr Glu Asp Ile Leu Ser Gly Phe Lys Met His Cys Arg Gly
675 680 685

Trp Arg Ser Ile Tyr Cys Met Pro Val Arg Pro Ala Phe Lys Gly Ser
690 695 700

Ala Pro Ile Asn Leu Ser Asp Arg Leu His Gln Val Leu Arg Trp Ala
705 710 715 720

Leu Gly Ser Val Glu Ile Phe Phe Ser Arg His Cys Pro Leu Trp Tyr
725 730 735

Gly Phe Gly Gly Gly Arg Leu Lys Trp Leu Gln Arg Leu Ala Tyr Ile
740 745 750

Asn Thr Ile Val Tyr Pro Phe Thr Ser Leu Pro Leu Ile Ala Tyr Cys
755 760 765

Thr Ile Pro Ala Val Cys Leu Leu Thr Gly Lys Phe Ile Ile Pro Thr
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Leu Ser Asn Leu Ala Ser Met Leu Phe Leu Gly Leu Phe Ile Ser Ile
785 790 795 800

Ile Val Thr Ala Val Leu Glu Leu Arg Trp Ser Gly Val Ser Ile Glu
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Asp Leu Trp Arg Asn Glu Gln Phe Trp Val Ile Gly Gly Val Ser Ala
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His Leu Phe Ala Val Phe Gln Gly Phe Leu Lys Met Leu Ala Gly Ile
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Asp Thr Asn Phe Thr Val Thr Ala Lys Ala Ala Glu Asp Ala Glu Phe
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Gly Glu Leu Tyr Met Val Lys Trp Thr Thr Leu Leu Ile Pro Pro Thr
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Thr Leu Leu Ile Ile Asn Met Ser Gly Cys Ala Gly Phe Ser Asp Ala
885 890 895

Leu Asn Lys Gly Tyr Glu Ala Trp Gly Pro Leu Phe Gly Lys Val Phe
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Phe Ala Phe Trp Val Ile Leu His Leu Tyr Pro Phe Leu Lys Gly Leu
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Met Gly Arg Gln Asn Leu Thr Pro Thr Ile Val Val Leu Trp Ser Val
930 935 940

Leu Leu Ala Ser Val Phe Ser Leu Val Trp Val Lys Ile Asn Pro Phe
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Met Met Glu Ser Gly Ala Pro Ile Cys His Thr Cys Gly Glu Gln Val
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ggg cat gat gca aat ggg gag cta ttt gtg gct tgc cat gag tgt agc 936
Gly His Asp Ala Asn Gly Glu Leu Phe Val Ala Cys His Glu Cys Ser
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tat ccc atg tgc aag tct tgt ttc gag ttt gaa atc aaa gag ggc cgg 984
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Lys Val Cys Leu Arg Cys Gly Ser
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		35					40					45			
Gly	Glu	Pro	Phe	Val	Ala	Cys	Asn	Glu	Cys	Ala	Phe	Pro	Val	Cys	Arg
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Pro	Cys	Tyr	Glu	Tyr	Glu	Arg	Arg	Glu	Gly	Asn	Gln	Ala	Cys	Pro	Gln
65					70					75					80
Cys	Lys	Thr	Arg	Phe	Lys	Arg	Leu	Lys	Gly	Ser	Pro	Arg	Val	Glu	Gly
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Ile	Ser	Ser	Asp	Arg	His	Ala	Leu	Ile	Val	Pro	Pro	Ser	Leu	Gly	Gly
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Glu Asp Gly Asp Asp Ala Asp Phe Pro Met Met Asp Glu Gly Arg Gln
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Pro Leu Ser Met Lys Ile Pro Ile Lys Ser Ser Lys Ile Asn Pro Tyr
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Tyr Arg Ile Leu His Pro Val Lys Asp Ala Tyr Ala Leu Trp Leu Ile
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Ser Val Ile Cys Glu Ile Trp Phe Ala Val Ser Trp Val Leu Asp Gln
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Phe Pro Lys Trp Tyr Pro Ile Glu Arg Glu Thr Tyr Leu Asp Arg Leu
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Ser Leu Arg Tyr Glu Lys Glu Gly Lys Pro Ser Gly Leu Ser Pro Val
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Asp Val Phe Val Ser Thr Val Asp Pro Leu Lys Glu Pro Pro Leu Ile
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Thr Ala Asn Thr Val Leu Ser Ile Leu Ala Val Asp Tyr Pro Val Asp
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Lys Val Ala Cys Tyr Val Ser Asp Asp Gly Ala Ala Met Leu Thr Phe
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Glu Ala Leu Ser Glu Thr Ala Glu Phe Ala Arg Lys Trp Val Pro Phe
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Cys Lys Lys Tyr Cys Ile Glu Pro Arg Ala Pro Glu Trp Tyr Phe Cys
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His Lys Met Asp Tyr Leu Lys Asn Lys Val His Pro Ala Phe Val Arg
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Glu Arg Arg Ala Met Lys Arg Asp Tyr Glu Glu Phe Lys Val Lys Ile
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Asn Ala Leu Val Ala Thr Ala Gln Lys Val Pro Glu Asp Gly Trp Thr
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Met Gln Asp Gly Thr Pro Trp Pro Gly Asn Ser Val Arg Asp His Pro
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Gly Met Ile Gln Val Phe Leu Gly Ser Asp Gly Val Arg Asp Val Glu
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Asn Asn Glu Leu Pro Arg Leu Val Tyr Val Ser Arg Glu Lys Arg Pro
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Gly Phe Asp His His Lys Lys Ala Gly Ala Met Asn Ser Leu Ile Arg
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Asp His Tyr Ile Asn Asn Ser Lys Ala Leu Arg Glu Ala Met Cys Phe
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Met Met Asp Pro Gln Ser Gly Lys Lys Ile Cys Tyr Val Gln Phe Pro
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Gln Arg Phe Asp Gly Ile Asp Arg His Asp Arg Tyr Ser Asn Arg Asn
595 600 605

Val Val Phe Phe Asp Ile Asn Met Lys Gly Leu Asp Gly Leu Gln Gly
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Pro Ile Tyr Val Thr Gly Cys Val Phe Arg Arg Gln Ala Leu Tyr Gly
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Phe Asp Ala Pro Lys Lys Lys Lys Gly Pro Arg Lys Thr Cys Asn Cys
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Trp Pro Lys Trp Cys Leu Leu Cys Phe Gly Ser Arg Lys Asn Arg Lys
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Ala Lys Thr Val Ala Ala Asp Lys Lys Lys Lys Asn Arg Glu Ala Ser
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Lys Gln Ile His Ala Leu Glu Asn Ile Glu Glu Gly Arg Gly His Lys
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Val Leu Asn Val Glu Gln Ser Thr Glu Ala Met Gln Met Lys Leu Gln
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Lys Lys Tyr Gly Gln Ser Pro Val Phe Val Ala Ser Ala Arg Leu Glu
725 730 735

Asn Gly Gly Met Ala Arg Asn Ala Ser Pro Ala Cys Leu Leu Lys Glu
740 745 750

Ala Ile Gln Val Ile Ser Arg Gly Tyr Glu Asp Lys Thr Glu Trp Gly
755 760 765

Lys Glu Ile Gly Trp Ile Tyr Gly Ser Val Thr Glu Asp Ile Leu Thr
770 775 780

Gly Ser Lys Met His Ser His Gly Trp Arg His Val Tyr Cys Thr Pro
785 790 795 800

Lys Leu Ala Ala Phe Lys Gly Ser Ala Pro Ile Asn Leu Ser Asp Arg
805 810 815

Leu His Gln Val Leu Arg Trp Ala Leu Gly Ser Val Glu Ile Phe Leu
820 825 830

Ser Arg His Cys Pro Ile Trp Tyr Gly Tyr Gly Gly Gly Leu Lys Trp
835 840 845

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Leu Glu Arg Leu Ser Tyr Ile Asn Ser Val Val Tyr Pro Trp Thr Ser
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Leu Pro Leu Ile Val Tyr Cys Ser Leu Pro Ala Ile Cys Leu Leu Thr
865                 870                 875                 880

Gly Lys Phe Ile Val Pro Glu Ile Ser Asn Tyr Ala Ser Ile Leu Phe
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Met Ala Leu Phe Ser Ser Ile Ala Ile Thr Gly Ile Leu Glu Met Gln
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Trp Gly Lys Val Gly Ile Asp Asp Trp Trp Arg Asn Glu Gln Phe Trp
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Val Ile Gly Gly Val Ser Ala His Leu Phe Ala Leu Phe Gln Gly Leu
    930                 935                 940

Leu Lys Val Leu Ala Gly Val Asp Thr Asn Phe Thr Val Thr Ser Lys
945                 950                 955                 960

Ala Ala Asp Asp Gly Glu Phe Ser Asp Leu Tyr Leu Phe Lys Trp Thr
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Ser Leu Leu Ile Pro Pro Met Thr Leu Leu Ile Ile Asn Val Ile Gly
            980                 985                 990

Val Ile Val Gly Val Ser Asp Ala Ile Ser Asn Gly Tyr Asp Ser Trp
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Gly Pro Leu Phe Gly Arg Leu Phe Phe Ala Leu Trp Val Ile Ile His
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Leu Tyr Pro Phe Leu Lys Gly Leu Leu Gly Lys Gln Asp Arg Met Pro
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Thr Ile Ile Val Val Trp Ser Ile Leu Leu Ala Ser Ile Leu Thr Leu
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Leu Trp Val Arg Val Asn Pro Phe Val Ala Lys Gly Gly Pro Ile Leu
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Glu Ile Cys Gly Leu Asp Cys Leu
        1075                1080
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